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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,442	07/23/2003	Shivnandan D. Kaushik	ITL.0970US (P16133)	7941

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EXAMINER

ELAMIN, ABDELMONIEM I

ART UNIT PAPER NUMBER

2116

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,442

Applicant(s)

KAUSHIK ET AL.

Examiner

A Elamin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 6-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 6-29 is/are rejected.
- 7) ☒ Claim(s) 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 6-8, 19-24, 28, 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Nicol et al, US. Pat. No. 6,141,762.

3. Claims 1, 19, 24, 28, 30, Nicol teaches a method comprising:

determining utilization values for a plurality of processors having power utilization dependencies [*the number of tasks allocated to each processor is known by the operating system, see for example, col. 2, lines 22-24 col. 3, lines 10-20*]; and

identifying a target frequency for the plurality of processors based on the utilization values [*see, for example, col. 2, lines 23-27*].

4. Claims 2, 20, Nicol teaches transitioning a processor package to the target frequency [*see col. 2, lines 23-27*], the processor package [*IC of Fig. 2*] including the plurality of processors [*PE 101-104 of Fig. 2*].

5. Claims 6, 21, Nicol teaches identifying the target frequency comprises identifying a frequency operating point closest to a maximum operating frequency of the processor package multiplied by a maximum utilization of one of the plurality of processors having a highest value for the maximum utilization [*col. 3, line 65 thru col. 4, line 5, col. 7, lines 51-55*].

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6. Claims 7, 22, Nicol teaches transitioning the processor package to a higher frequency if one of the utilization values is an up decision [*col. 5, lines 24-36*].

7. Claims 8, 23, Nicol teaches transitioning the processor package to a lower frequency if all of the utilization values are a down decision [*col. 2, lines 23-27*].

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 9-18, 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nicol, US. Pat. No. 6,141,762.

10. Claims 9, 11 and 25, Nicol fails to teach a plurality of logical processors.

Official Notice is taken that both the concept and the advantages of logical processors is old and well known in the art.

11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Nicol to include a plurality of logical processors, because of the fact that two or more logical processors may exist on one physical processor.

12. Claims 10, Nicol fails to teach the plurality of processors comprise at least one multicore processor.

Official Notice is taken that both the concept and the advantages of multicore processors is old and well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Nicol to include multicore processors, because, in multi-core processors, each of the main cores provides computing power that equals or exceeds that of a conventional high-performance single core processor.

13. Claim 12, Nicol teaches transitioning the physical processor to the target frequency [*see col. 2, lines 23-27*].

14. Claim 13, 27, Nicol teaches transitioning the physical processor to a higher frequency if any of the logical processors has an up utilization decision [*col. 5, lines 24-36*].

15. Claim 14, Nicol teaches the higher frequency is based on a highest utilization processor of the logical processors [*col. 3, line 65 thru col. 4, line 5, col. 7, lines 51-55*].

16. Claim 15, Nicol teaches transitioning the physical processor to a lower frequency if all of the logical processors have a down utilization decision [*col. 2, lines 23-27*].

17. Claim 16, Nicol teaches the lower frequency is based on a highest utilization processor of the logical processors [*col. 7, lines 51-55*].

18. Claim 17, Nicol teaches transitioning the physical processor comprises transitioning to a higher frequency if any of the logical processors needs additional compute power [*col. 5, lines 24-36*].

19. Claim 18, Nicol teaches wherein calculating the target frequency is based on desired power and performance characteristics [*abstract*].

20. Claim 26, Nicol teaches identify a frequency operating point closest to a maximum operating frequency of the processor package multiplied by a maximum utilization of one of the

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plurality of logical processors having a highest value for the maximum utilization [*col. 3, line 65 thru col. 4, line 5, col. 7, lines 51-55*].

Allowable Subject Matter

21. Claim 29 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A Elamin whose telephone number is (571) 272-3674. The examiner can normally be reached on MON-FRI 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



A. Elamin

Primary Examiner

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April 12, 2006